REMARKS

Formerly withdrawn Claims 24-37 have been amended to depend from Claim 21 and are thus now included in the group of claims previously elected for prosecution.

Claims 1, 5-15 and 21-23 have been rejected under 35 U.S.C. §102(e) as being anticipated by Lin (U.S. Patent No. 5,960,132). Claims 16-17 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Lin. Reconsideration of these claims is respectfully requested.

Lin discloses fiber-optic free-space micromachined matrix switches. A first embodiment of an optical switch device 100 is generally introduced in FIGS. 5-9. A plurality of optical switch devices 100 forms a free-space optical matrix crossconnect apparatus 102. As shown in FIG. 5, the optical switch device 100 is used for redirecting beams of light L_1 -L_n that are traveling in free-space through the optical matrix crossconnect apparatus 102 along a first direction indicated by arrow F to a second direction indicated by arrow S. As illustrated in FIG. 5, the first direction F is different from the second direction S. In FIG. 6, the first embodiment of the optical switch device 100 of the present invention includes a base member 104, a reflective panel 106 and an actuator 108. The base member 104, the reflective panel 106 and the actuator 106 are fabricated from a stiff yet resilient material such as silicon-based materials which are commonly used for micromachining operations. The reflective panel 106 is pivotally connected to the base member 104 by a hinging structure 109 that is discussed in more detail below. In general, the hinging structure 109 enables the reflective panel 106 to move unbiasedly between a reflective state and a non-reflective state Col. 5, lines 23-46. Actuator 108 includes a hinge assembly 124 and a translation plate 126. The hinge assembly 124 has a pair of connecting rods 128. A first end 130 of each of the connecting rods 128 is pivotally connected to the reflective panel 106. As shown in FIG. 6, the reflective panel 106 includes arm members 132 that extend outwardly from respective lateral sides of the reflective panel 106. The first end 130 of each of the connecting rods 128 includes a hinging channel that receives the staple member 120 to hingably connect the first ends 130 of each of the connecting rods 128 to the arm members 132 of the reflective panel 106 in a manner similar to the hinging method described above. Each of the connecting rods 128 also includes a second end 134 which is disposed opposite of the respective first end 132 and is pivotally connected to the translation plate 126 also in a manner similarly described above. Col. 6, lines 38-54. In the fifth exemplary embodiment of the optical switch device 500 of the present invention, a plurality of comb drive mechanisms 508 are connected to the translation plate 526 by push rods 534. The push rods 534 are disposed obliquely relative to the direction of rectilinear movement shown by arrow A of the translation

plate 526. Thus, corresponding pairs of the comb drive mechanisms 508 move the translation plate 526 to and between the first position P_F and the second position P_S, thereby moving the reflective panel 106 to and between the reflective state and non-reflective state. The free-space optical matrix crossconnect apparatus 102 includes the base member 104, an array of optical switch devices 100 and a plurality of fiber optic cables 140. Col. 8, lines 43-59.

Amended Claim 1 is patentable over Lin by calling for an optical microswitch of the type set forth therein having, among other things, microattachment means for rigidly coupling the plurality of mirrors to the respective plurality of micromotors. Lin does not disclose microattachment means for rigidly coupling the plurality of mirrors to the respective plurality of micromotors. Instead, as discussed above, Lin discloses a complex hinge assembly which certainly is not micro, that is small or minute in size, and additionally does not serve to rigidly couple each mirror to its respective micromotor.

The inclusion of microattachment means in the optical microswitch contributes to the relatively small size of the microswitch. The rigid coupling of each mirror to its respective micromotor is advantageous as it reduces the complexity, and thus reduces the cost, of the microswitch. In addition, the rigid coupling enhances the accuracy of the mirror placement and thus the accuracy of the redirection of the laser beam.

In view of the foregoing, the Examiner's rejection of Claim 1 as being anticipated by Lin is improper and should be withdrawn. Claim 1 should be found allowable.

Claims 5-17 depend from Claim 1 and are patentable for the same reasons as Claim 1 and by reason of the additional limitations called for therein.

Independent Claim 21 has been amended in the same manner as Claim 1 and is thus patentable for the reasons discussed above with respect to Claim 1.

Claims 22-23, and amended Claims 24-37, depend from Claim 21 and are patentable for the same reasons as Claim 21 and by reason of the additional limitations called for therein.

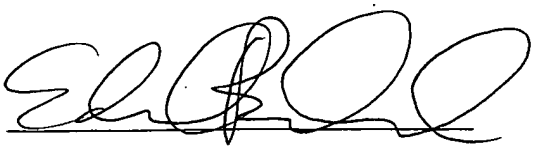
Claims 2-4 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 2-4 of U.S. Patent No. 6,134,207. Claims 2-4 herein have been cancelled, without prejudice. Accordingly, the double patenting rejection should be withdrawn.

In view of the foregoing, it is respectfully submitted that the claims of record are allowable and that the application should be passed to issue. Should the Examiner believe that the application is not in a condition for allowance and that a telephone interview would help

further prosecution of this case, the Examiner is requested to contact the undersigned attorney at the phone number below.

Respectfully submitted,

DORSEY & WHITNEY LLP

By 

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